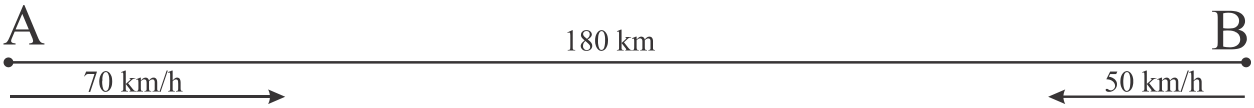
A and G 1. Class work 17.

Two bicyclists start 90 miles apart, and head towards each other, each one going 10 mph. At the same instant, a fly leaves the first bike and flies at 20 mph to the second. When it gets there, it immediately turns around and heads back to the first. Then it repeats, going back and forth between the two bikers. By the time they reach each other, how far will the fly have travelled?

1. The speed of the boat in a still water on a lake is 12 km/h. The speed of the river flow is 3 km/h. How many hours does the boat need to go from the city A to the city B if the distance between the two cities is 45 km and the city A is up on the river, i.e. the river flows from A to B?
   How many hours does this boat need to go back from the city B to the city A?
2. The speed of the boat going downstream the river is 19 km/h, and the speed of the same boat going upstream this river is 15 km/h. What is the speed of the river stream and what is the speed of the boat in a still water on a lake?

3. Two cars start moving towards each other at the same time from the two cities, A and B. The distance between the cities is 180 km. The speed of the car that departed from the city A is 50 km/h, the speed of the car that left from the city B is 70 km/h. In how many hours will they meet?



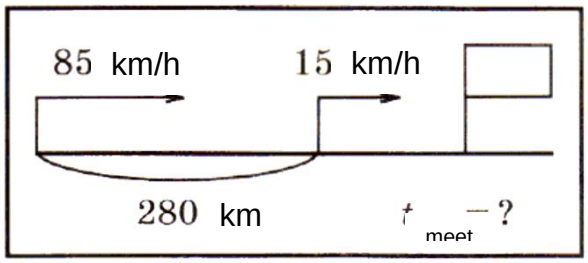
   How far from the city A they will meet?

4. Two cars start moving at the same time in the same direction from cities A and B, as shown in the picture below.

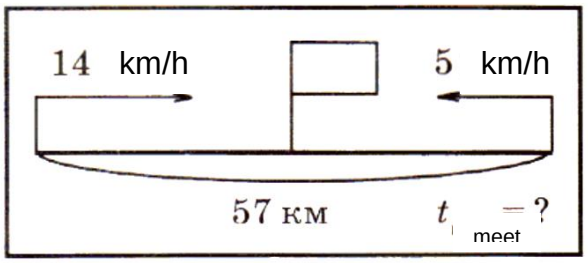
   How many hours will it take for the faster car to catch up with the slower car? How far from the city A will they meet?

5. For the four pictures below, come up with the problem and solve it.

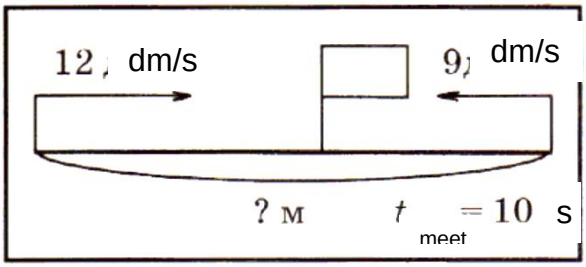
a)



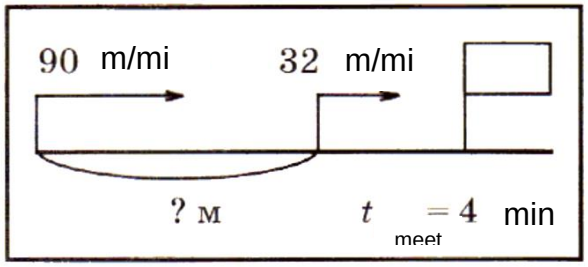
c)



b)



d)



6. Evaluate the following expression by the most convenient way:

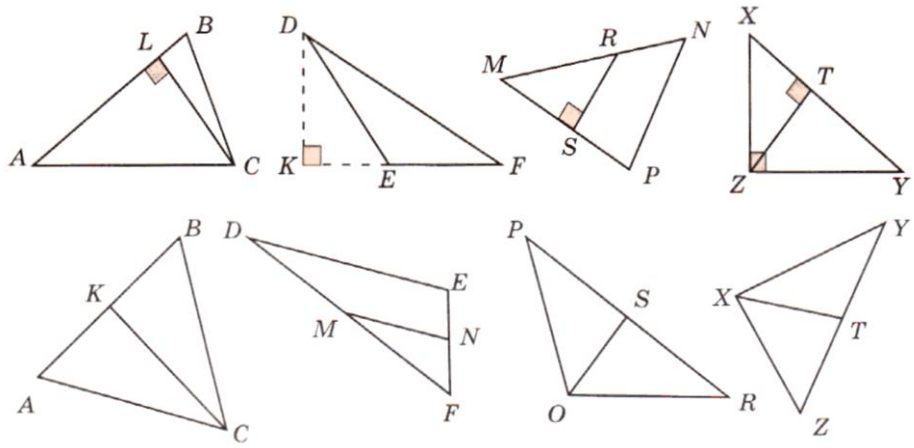
$$95^2 - 5^2 =$$

7. Simplify:

$$\frac{5x - 1 - 3x}{2 - 4x} \qquad \frac{x - 1}{x^2 - 1} \qquad \frac{p - p^2}{p^2 - 1}$$

$$\frac{0.64y^2 - 4.8y + 9}{0.8y - 3} \qquad \frac{n^2 - m^2}{(n - m)^2}$$

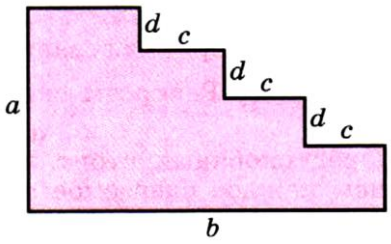
8. Find altitudes and medians on the following picture:



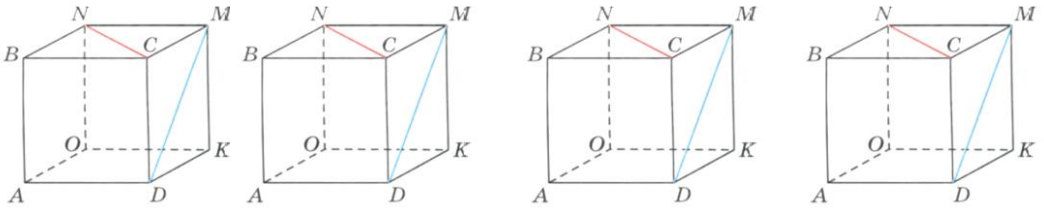
9. Evaluate:

$$\frac{1.75:1.25+1.4\cdot 1\frac{4}{7}+\left(2.88+1\frac{3}{25}\right)\cdot 0.1}{1:\left(\left(2.5:\frac{5}{18}-0.9\right):0.09\right)}$$

10. Write the expression for the perimeter and area of the figure below.



11. On the pictures below color
    a. the edges perpendicular to the edge AB
    b. the edges, parallel to the edge AB
    c. draw the diagonal of the face ABNO parallel to diagonal MD.
    d. draw the diagonal of the face AOKD parallel to the diagonal NC.



12.